

July 3, 2012

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**SUPERFUND DIVISION**

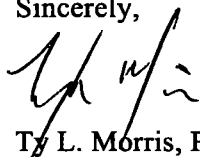
Mr. Jason Gunter  
Remedial Project Manager  
U.S. Environmental Protection Agency  
Region 7 - Superfund Branch  
901 North 5<sup>th</sup> Street  
Kansas City, KS 66101

**Re: The Doe Run Company – Federal Mine Tailings Site Monthly Progress Report**

Dear Mr. Gunter:

As required by Article XVII, Paragraph 73 of the Administrative Order on Consent (Docket No. VII-97-F-0009) for the referenced project and on behalf of The Doe Run Company, the progress report for the period May 1, 2012 through May 31, 2012 is enclosed. If you have any questions or comments, please call me at 573-638-5020 or Mark Nations at 573-518-0800.

Sincerely,



Ty L. Morris, P.E., R.G.  
Vice President

TLM/jms  
Enclosure

c: Mark Nations – TDRC  
Matt Wohl – TDRC (electronic only)  
Martin Kator – MDNR - DSP  
Kathy Rangen – MDNR - HWP  
Adam Nanney – Barr Engineering

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**Federal Mine Tailings Site**  
Park Hills, Missouri  
**Monthly Progress Report**  
Period: May 1, 2012 – May 31, 2012

**1. Actions Performed or Completed This Period:**

- a. Work continued on the task of stockpiling rock onsite. This work focused on stockpiling trail rock, Type 1 riprap, and Type 2 riprap. These rock types are being stockpiled in the northern portion of the Borrow Area. As of the end of the period, work on this task continued.
- b. Work in the ORV Riding Area continues to be on hold. A plan on how to complete work has been agreed upon between Doe Run and Missouri Department of Natural Resources – Division of State Parks (MDNR-DSP). Currently, Doe Run is in the process of acquiring the necessary equipment to build fence to section off certain areas of the ORV Riding Area. It is anticipated that the fence will be built in early June and that construction activities will begin immediately after. A copy of the ORV Riding Area Closure Plan, the revised riding permits, and figures showing the phased fencing have been included with this report.
- c. Work continued in the Former Chat Pile Area. This work focused on constructing the drainage channel that runs through this area. This work included excavating mine waste and weathered bedrock from the channel to construct the channel bottom to the approved final subgrade elevations. As of the end of the period, work on this task continued.

The seep that developed at the base of the slope on the downstream side of the sedimentation basin located at the downstream end of the channel that runs through the Former Chat Pile Area has been left open and continues to flow freely. At this time, there is not an obvious source of water for this seep, and the flow has caused a small amount of erosion in the toe of this slope. Further exploration of this seep is planned. Doe Run also plans to contact Missouri Department of Transportation (MoDOT) to see if the existing retention and drop structures can be bypassed to avoid future seepage in the berm.

- d. Work in the Former Mill Area continued on the task of constructing the interpretive walk trail through the mill. This work focused on final grading activities around this area. As of the end of the period, the entire interpretive walk trail had been completed.
- e. In January, EPA requested that air monitors, in addition to the monitor identified in the Removal Action Work Plan (RAWP), be placed around the site. Doe Run and MDNR-DSP have determined how this issue will be addressed and are in the progress of implementing these activities. The first step in this process will be to identify a location for the set of air monitors (one high volume TSP particulate sampler – volumetric flow controlled and one EPA reference method high volume PM<sub>10</sub> sampler – volumetric flow controlled) to be placed. As of the end of the period, this step had been completed.

Doe Run also plans to utilize air monitors that are already being used in other air monitoring networks in the Park Hills area. A plan identifying the new location discussed above, as well as the existing locations they intend to utilize, will be provided to EPA once it has been finalized.

**2. Data and Results Received This Period:**

- a. Included with this progress report are a table and two charts. These documents show the data for the MDNR-DSP air monitor located near the ORV Riding Area from January 2010 through March 2012. This information is being provided to EPA in this report as a courtesy to MDNR-DSP. Neither The Doe Run Company nor Barr Engineering were involved with siting this monitor, collecting the samples, processing the samples, evaluating the data, or verifying the accuracy of the data.

**3. Planned Activities for Next Period:**

- a. Work in the ORV Riding Area will resume. Work in this area will focus on constructing temporary fencing around the Phase I area to keep riders out of the construction area. Once the fence has been installed, construction activities on this area will resume.
- b. Work will continue on the task of stockpiling trail rock, Type 1 riprap, and Type 2 riprap.
- c. Exploration activities will be completed to determine the source of the seep that has developed at the base of the slope on the downstream side of the sedimentation basin located at the downstream end of the channel that runs through the Former Chat Pile Area.
- d. The plan to place additional air monitors around the site will be implemented.
- e. The next MDNR-DSP progress meeting is planned for July 9, 2012.

**4. Changes in Personnel:**

- a. None.

**5. Issues or Problems Encountered and the Resolution:**

- a. None.

**End of Monthly Progress Report**

**St. Joe State Park Lead, January 2010 through March 2012, ug/m3**

Note: values of 0.007 (or of 0.004 starting July 2011) are generally nondetects

Note: blank cells indicate no valid sample, or insufficient data to calculate an average

**Monthly Average Lead Concentrations, 2010-2012, ug/m3**

	<b>SJSP</b>
<b>January</b>	0.015
<b>February</b>	0.009
<b>March</b>	0.008
<b>April</b>	0.021
<b>May</b>	0.054
<b>June</b>	0.033
<b>July</b>	0.037
<b>August</b>	0.033
<b>September</b>	0.011
<b>October</b>	0.052
<b>November</b>	0.021
<b>December</b>	0.032
<b>January</b>	0.011
<b>February</b>	0.007
<b>March</b>	
<b>April</b>	0.007
<b>May</b>	0.007
<b>June</b>	0.015
<b>July</b>	0.028
<b>August</b>	0.030
<b>September</b>	0.364
<b>October</b>	
<b>November</b>	
<b>December</b>	0.011
<b>January</b>	0.023
<b>February</b>	0.024
<b>March</b>	0.081

### 3-Month Rolling Average Lead Concentrations, 2010-2011, ug/m3

Jan-Mar	0.011	0.15
Feb-Apr	0.012	0.15
Mar-May	0.027	0.15
Apr-Jun	0.036	0.15
May-Jul	0.041	0.15
Jun-Aug	0.034	0.15
Jul-Sep	0.027	0.15
Aug-Oct	0.032	0.15
Sep-Nov	0.028	0.15
Oct-Dec	0.035	0.15
Nov-Jan	0.021	0.15
Dec-Feb	0.017	0.15
Jan-Mar		0.15
Feb-Apr		0.15
Mar-May		0.15
Apr-Jun	0.010	0.15
May-Jul	0.017	0.15
Jun-Aug	0.024	0.15
Jul-Sep	0.141	0.15
Aug-Oct		0.15
Sep-Nov		0.15
Oct-Dec		0.15
Nov-Jan		0.15
Dec-Feb	0.019	0.15
Jan-Mar	0.043	0.15

**Daily Average Lead Concentrations, ug/m3**

	<b>SJSP</b>
1/2/10	0.052
1/5/10	0.019
1/8/10	0.008
1/11/10	0.007
1/14/10	0.007
1/17/10	0.007
1/20/10	0.007
1/23/10	0.007
1/26/10	0.029
1/29/10	0.007
2/1/10	0.007
2/4/10	0.007
2/7/10	0.015
2/10/10	
2/13/10	
2/16/10	
2/19/10	0.007
2/22/10	
2/25/10	
2/28/10	
3/3/10	0.011
3/6/10	
3/9/10	0.007
3/12/10	
3/15/10	0.007
3/18/10	
3/21/10	0.007
3/24/10	
3/27/10	0.007
3/30/10	
4/2/10	
4/5/10	0.007
4/8/10	0.018
4/11/10	
4/14/10	
4/17/10	
4/20/10	0.050
4/23/10	
4/26/10	0.007
4/29/10	
5/2/10	0.011
5/5/10	0.014
5/8/10	0.260
5/11/10	
5/14/10	0.025
5/17/10	0.007
5/20/10	0.007
5/23/10	0.049
5/26/10	0.056
5/29/10	
6/1/10	
6/4/10	0.011
6/7/10	0.028
6/10/10	0.010
6/13/10	
6/16/10	0.059
6/19/10	0.084
6/22/10	0.017
6/25/10	0.021

**Daily Average Lead Concentrations, ug/m3**

	<b>SJSP</b>
6/28/10	
7/1/10	0.032
7/4/10	0.052
7/7/10	0.028
7/10/10	0.108
7/13/10	0.011
7/16/10	0.024
7/19/10	0.007
7/22/10	
7/25/10	
7/28/10	
7/31/10	0.031
8/3/10	0.017
8/6/10	0.035
8/9/10	0.017
8/12/10	0.024
8/15/10	0.104
8/18/10	0.042
8/21/10	0.021
8/24/10	
8/27/10	0.032
8/30/10	0.007
9/2/10	0.007
9/5/10	
9/8/10	0.011
9/11/10	
9/14/10	
9/17/10	0.007
9/20/10	
9/23/10	0.007
9/26/10	0.018
9/29/10	0.014
10/2/10	0.075
10/5/10	0.022
10/8/10	0.021
10/11/10	0.049
10/14/10	0.014
10/17/10	0.188
10/20/10	
10/23/10	
10/26/10	0.014
10/29/10	0.032
11/1/10	0.018
11/4/10	
11/7/10	0.014
11/10/10	0.011
11/13/10	0.039
11/16/10	0.061
11/19/10	0.007
11/22/10	0.007
11/25/10	
11/28/10	0.007
12/1/10	0.015
12/4/10	0.029
12/7/10	
12/10/10	0.043
12/13/10	
12/16/10	
12/19/10	

**Daily Average Lead Concentrations, ug/m3**

	<b>SJSP</b>
12/22/10	0.059
12/25/10	
12/28/10	0.015
12/31/10	
1/3/11	
1/6/11	
1/9/11	
1/12/11	0.007
1/15/11	0.015
1/18/11	
1/21/11	
1/24/11	
1/27/11	
1/30/11	
2/2/11	
2/5/11	
2/8/11	0.007
2/11/11	
2/14/11	0.007
2/17/11	
2/20/11	
2/23/11	
2/26/11	
3/1/11	
3/4/11	
3/7/11	
3/10/11	
3/13/11	
3/16/11	
3/19/11	
3/22/11	
3/25/11	
3/28/11	
3/31/11	
4/3/11	
4/6/11	
4/9/11	
4/12/11	
4/15/11	0.007
4/18/11	
4/21/11	0.007
4/24/11	
4/27/11	0.007
4/30/11	
5/3/11	0.008
5/6/11	
5/9/11	0.007
5/12/11	
5/15/11	0.007
5/18/11	
5/21/11	0.007
5/24/11	
5/27/11	0.007
5/30/11	
6/2/11	0.012
6/5/11	
6/8/11	0.023
6/11/11	
6/14/11	0.017



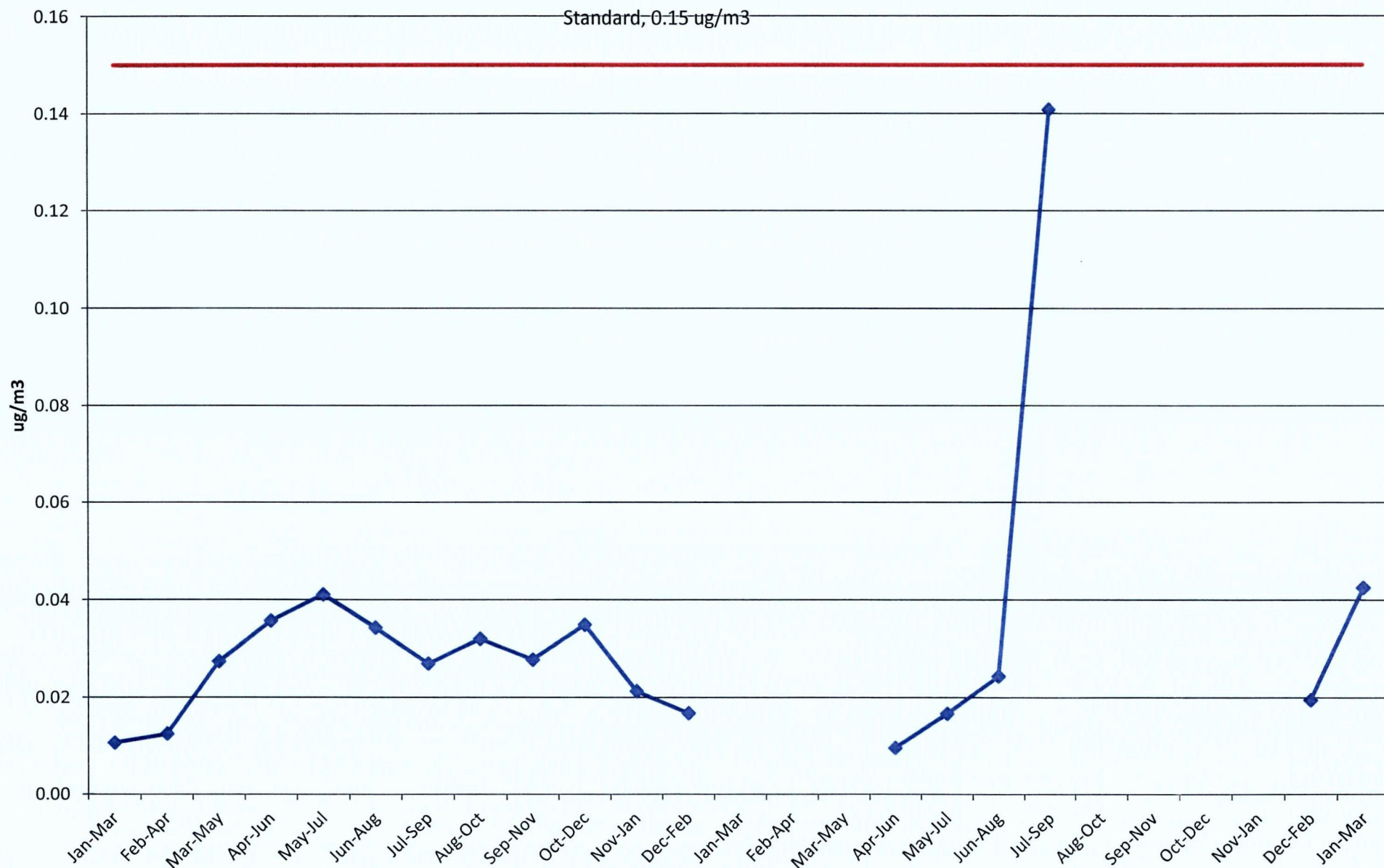
**Daily Average Lead Concentrations, ug/m3**

	<b>SJSP</b>
6/17/11	
6/20/11	0.007
6/23/11	
6/26/11	0.014
6/29/11	
7/2/11	0.053
7/5/11	
7/8/11	0.020
7/11/11	
7/14/11	0.011
7/17/11	
7/20/11	0.038
7/23/11	
7/26/11	0.019
7/29/11	
8/1/11	0.014
8/4/11	
8/7/11	0.047
8/10/11	
8/13/11	0.027
8/16/11	
8/19/11	0.014
8/22/11	
8/25/11	0.054
8/28/11	
8/31/11	0.025
9/3/11	
9/6/11	0.341
9/9/11	
9/12/11	0.039
9/15/11	
9/18/11	
9/21/11	
9/24/11	
9/27/11	
9/30/11	0.712
10/3/11	
10/6/11	0.032
10/9/11	
10/12/11	
10/15/11	
10/18/11	
10/21/11	
10/24/11	0.025
10/27/11	
10/30/11	
11/2/11	
11/5/11	
11/8/11	
11/11/11	
11/14/11	
11/17/11	
11/20/11	
11/23/11	
11/26/11	0.003
11/29/11	0.008
12/2/11	0.012
12/5/11	
12/8/11	0.025

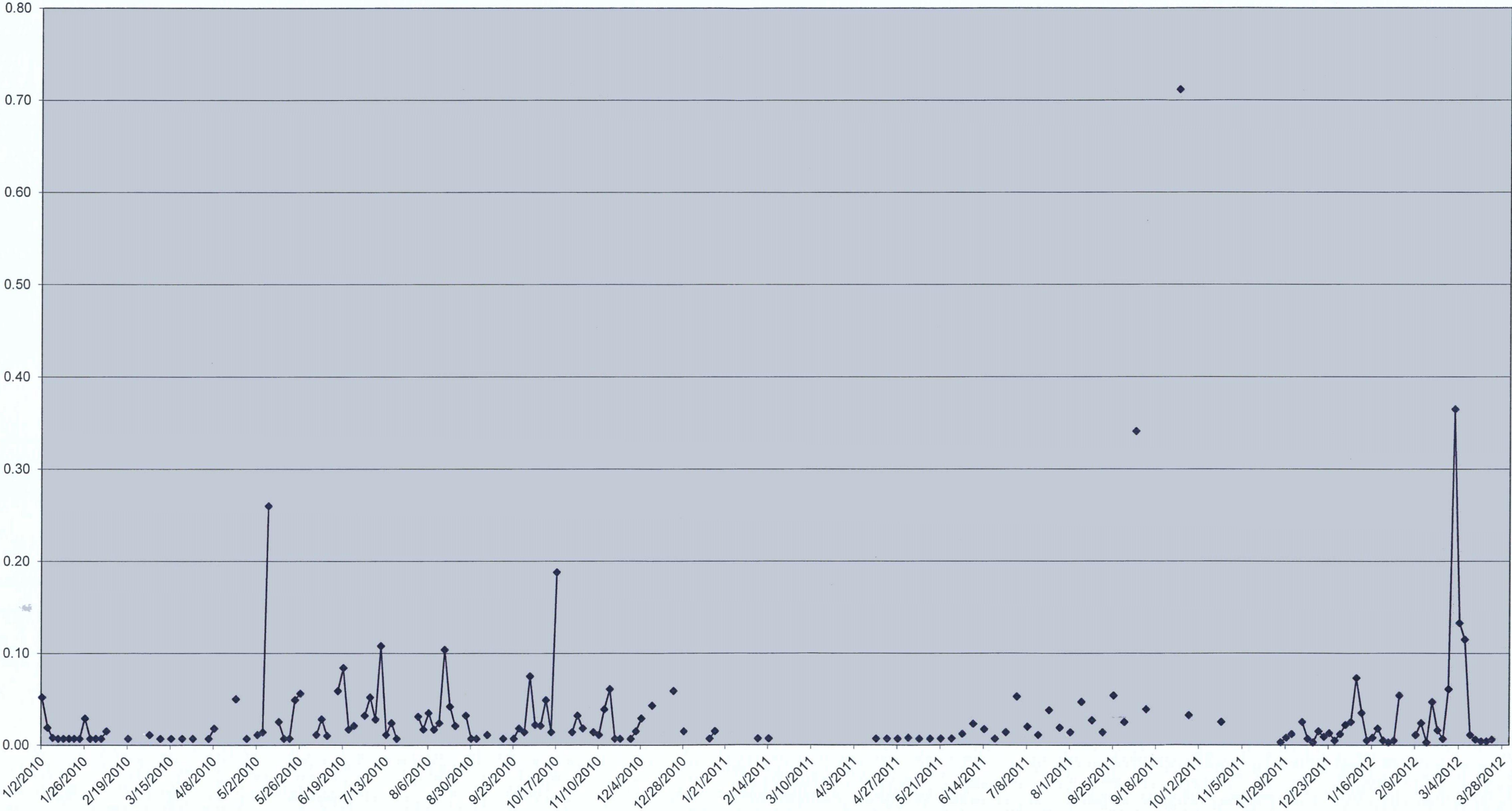
**Daily Average Lead Concentrations, ug/m3**

	<b>SJSP</b>
12/11/11	0.007
12/14/11	0.003
12/17/11	0.015
12/20/11	0.009
12/23/11	0.013
12/26/11	0.005
12/29/11	0.012
1/1/12	0.022
1/4/12	0.025
1/7/12	0.073
1/10/12	0.035
1/13/12	0.005
1/16/12	0.008
1/19/12	0.018
1/22/12	0.005
1/25/12	0.003
1/28/12	0.005
1/31/12	0.054
2/3/12	
2/6/12	
2/9/12	0.011
2/12/12	0.024
2/15/12	0.003
2/18/12	0.047
2/21/12	0.016
2/24/12	0.007
2/27/12	0.061
3/1/12	0.365
3/4/12	0.133
3/7/12	0.115
3/10/12	0.011
3/13/12	0.006
3/16/12	0.004
3/19/12	0.004
3/22/12	0.006
3/25/12	
3/28/12	
3/31/12	

# St. Joe State Park 3-Month Rolling Average Lead Concentrations, Jan 2010-Mar 2012



SJSP Daily Average Lead Concentrations, ug/m3



## **OFF-ROAD VEHICLE RIDING AREA CLOSURE PLAN**

Created: March 5, 2012

Amended: May 4, 2012

Jason Gunther (USEPA) has agreed that the areas where removal activities being conducted by the Doe Run Company (DRC) will need to be closed to ORV traffic. These closures will be completed in phases. The preliminary plans for each closure are outlined below and shown on the attached maps. The parties will meet and finalize a detailed closure plan that will effectively segregate the ORV traffic from the upcoming removal activities before work begins on each phase. This will effectively reduce the impact to park visitors and ensure efficient management by park staff while still serving the purpose of closing the work zones to off road traffic.

### **Phase I: Apollo Arm Closure**

A physical barrier (fence) with signing will encompass the entire Apollo arm of the tailings area. The barrier fence will be placed upon the tailings, approximately 12 feet from the edge of the tree-line. This will allow ORV traffic to travel along the fence outside the construction area to gain access to the wooded trails. DRC and park staff will work cooperatively while installing and removing the barrier fence for each phase of closure.

The Apollo Arm Closure will require approximately 15,000 feet of woven wire fencing material and T-posts. A yellow poly-cap will be installed along the top of the fence in open areas and at areas near trail openings. In areas where visibility may be a concern, an orange visual barrier fence will also be installed over the woven wire fence. Signing will be placed approximately every 150 feet and where trails open up near the barrier. Signing with red letters on white background, 6" wide by 16" high may be used for the boundary signing. The signs state "STOP, NO VEHICLES BEYOND THIS POINT, RSMO 253.155". This statute references operating a vehicle in an unauthorized area. This sign is currently used along the park's ORV boundary.

Park Staff plan to use a temporary three-gate system for controlling access to the construction area (See attached maps). Gates A and B will be closed during times of removal activity, generally Monday at 7:00 a.m through Friday at 12:00 p.m. except for holidays and special events. During times of removal activity, ORV trail access to the wooded trails will be gained by riding around the outside of the barrier fence. Friday after 12:00 p.m. and on weekends, Gates A and B will be open to allow ORV traffic additional access to the ORV trail network near Monsanto Lake. Gate C will be closed, prohibiting access to the removal activity area. This method of closure should allow the DRC access to the removal activity area without the interference of ORV traffic during the scheduled work week.

The method of closure will remain the same for each of the phases of closure outlined in this document. The material and signing will be removed after work has been completed in each closure and used for the next phase of closure.

**Phase II: North ORV Area Closure**

After completion of the work on the Apollo Arm the North ORV Riding Area will be closed. A physical barrier will be placed along the north ORV Riding Area from Trail 100 near Gate I, west to Trail 100 near Gate M. The barrier fencing will be placed in the tailings area leaving a 12 foot trail between the barrier fence and the wooded area.

The materials used in Phase I closure will be used to complete the Phase II closure. DRC is currently stock piling material in the Special Events area and will be bringing the material in from the north portion of the park.

**Phase III: Southwest ORV Area Closure**

After completion of the work in the Phase II Closure the Southwest ORV Riding Area will be closed. This will include the area directly north of the ORV Staging Area and JoLee Lake. The barrier installed during Phase II will be left in place from Trail 425, west to Trail 100 at Gate M. Additional barriers and signing will follow the tree-line south to the ORV Staging Area. Barrier fencing will also be installed west, to the entrance of the ORV Campground Trail.

A corridor for ORV traffic will extend from the Campground Trail, east past the ORV Staging Area. This will provide access to the open ORV riding areas. The materials used for barrier fencing and signing, will be relocated and used for Phase III Closure. Construction will be completed working from the east to the west.

Park Staff will work with the DRC to establish a corridor for the construction equipment, which is free from ORV traffic, but yet still provide access to the ORV trails from the ORV Staging Area.

**Phase IV: Northwest ORV Area Closure**

After work is completed in Phase III, a barrier fence will be established for the Phase IV closure. Phase IV Closure will take place in the north-south drainage in the western section of the north ORV Riding Area. The east-west barrier fencing established in closure of Phase II will be relocated to provide an ORV barrier for the Phase IV closure. The Phase IV closure barrier will consist of materials used in the previous closures.

The order of each closure could be affected by the duration of the work for each phase and the time of the year. Park staff will work closely with DRC staff to ensure that park recreational activities are prohibited in removal activity areas and that park visitors will be given access to appropriate areas for off road recreation.

**Site Inspection, Security, and Notification:**

Park Staff presently patrol the ORV riding area on a regular basis. Riders interfering with the removal activities, damaging or removing fencing or signage, or entering a restricted area will be issued a citation and/or have their ORV permit revoked. While the removal activities are ongoing, Park Staff will perform an inspection of the area at least daily to ensure no evidence of riders entering the restricted area and to ensure that all fencing and signing is in place. Park Staff will provide DRC employees with contact information in the event of unauthorized access to the removal activity area(s).

Park Staff will provide a map to all riders reflecting areas which are closed to ORV traffic for removal activity. This will be completed for each phase of closure. In addition, a larger map will be placed in the ORV Staging Area and on the park's website.

Park Management will also supply specific wording on the ORV Permits, agreeable to DRC, which notifies visitors of removal activities and warns of the penalties associated for unlawful entry into removal activity areas.

**Modification of the Plan**

If the measures as outlined in this plan are unsuccessful at segregating the ORV traffic from the removal activity, Park Staff will work with DRC to promptly develop additional measures to control or limit ORV traffic.

ST. JOE STATE PARK  
1-DAY PERMITMISSOURI DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF STATE PARKS  
OFF-ROAD VEHICLE PERMIT

PERMIT NUMBER

768051

MOTORCYCLE ☐  
A.T.V. ☐  
U.T.V. ☐  
DUNE ☐  
4-WHEEL DRIVE ☐MO ☐  
OS ☐Construction areas are RESTRICTED and off limits.  
These areas are marked on the accompanying map  
and/or identified by fencing and signs. Riding in  
restricted areas will result in citation and revocation of  
the permit.

Expiration Date

**LEAD EXPOSURE ADVISORY:** Lead tailings in the "Mine Tailings Area" may pose a health risk, especially to children six (6) years of age and under. The more contact a person has with lead, the greater the chance of health effects occurring. Lead can cause behavioral and developmental problems in children and may have other harmful effects in adults. Actions you can take to lower your exposure include avoiding or limiting your time in the main tailings area, washing face and hands before eating, and removing as much dust and soil as possible from clothing, equipment and vehicles before leaving the park.

MO 780-0859 (3-11)

**1-DAY FEE \$5.00**ST. JOE STATE PARK  
2-DAY PERMITMISSOURI DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF STATE PARKS  
OFF-ROAD VEHICLE PERMIT

PERMIT NUMBER

30990

MOTORCYCLE ☐  
A.T.V. ☐  
U.T.V. ☐  
DUNE ☐  
4-WHEEL DRIVE ☐MO ☐  
OS ☐Construction areas are RESTRICTED and off limits.  
These areas are marked on the accompanying map  
and/or identified by fencing and signs. Riding in  
restricted areas will result in citation and revocation of  
the permit.

Expiration Date

**LEAD EXPOSURE ADVISORY:** Lead tailings in the "Mine Tailings Area" may pose a health risk, especially to children six (6) years of age and under. The more contact a person has with lead, the greater the chance of health effects occurring. Lead can cause behavioral and developmental problems in children and may have other harmful effects in adults. Actions you can take to lower your exposure include avoiding or limiting your time in the main tailings area, washing face and hands before eating, and removing as much dust and soil as possible from clothing, equipment and vehicles before leaving the park.

MO 780-1907 (3-11)

**2-DAY FEE \$10.00**

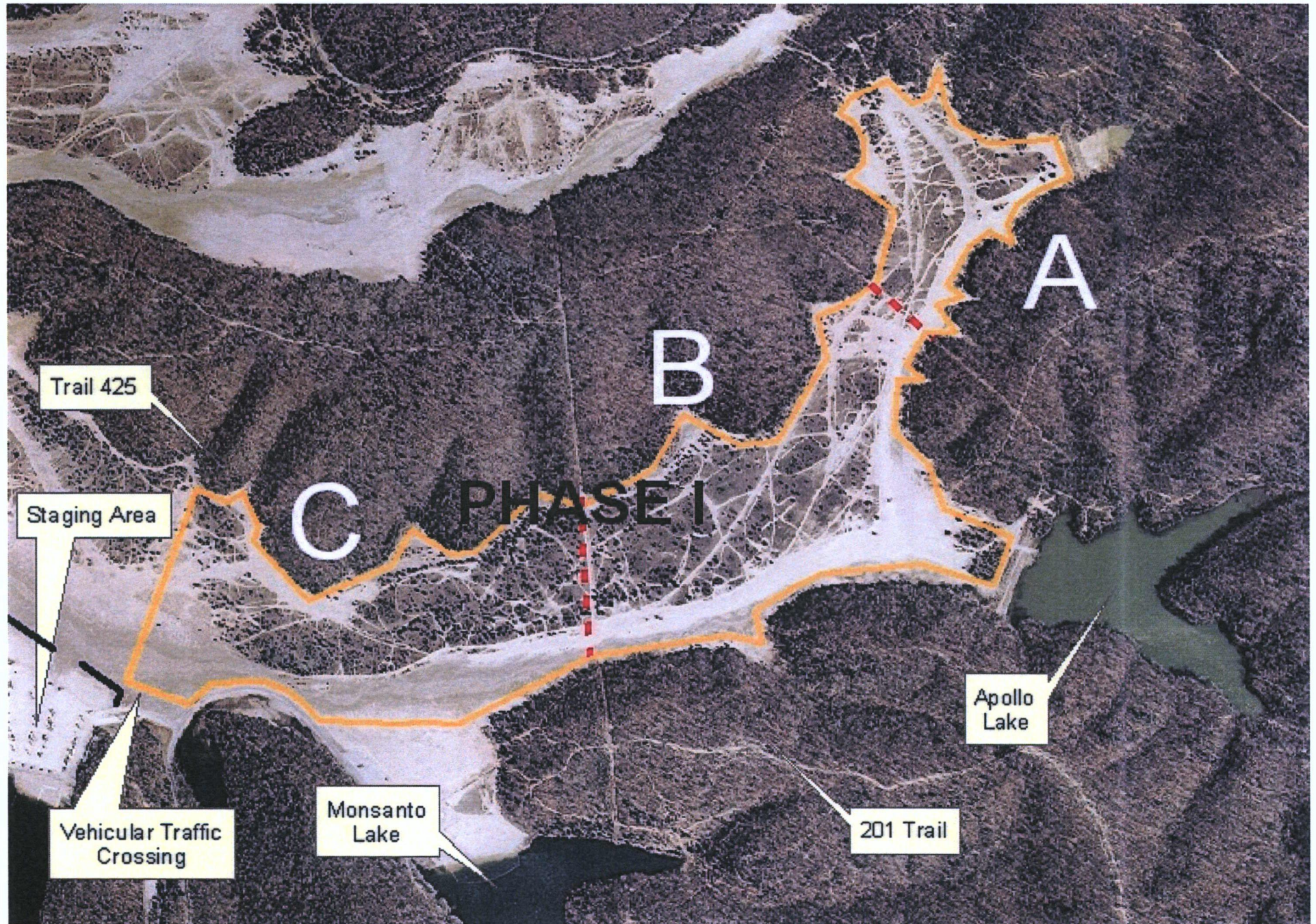


## ORV Area Closure – Phase I Traffic Gates



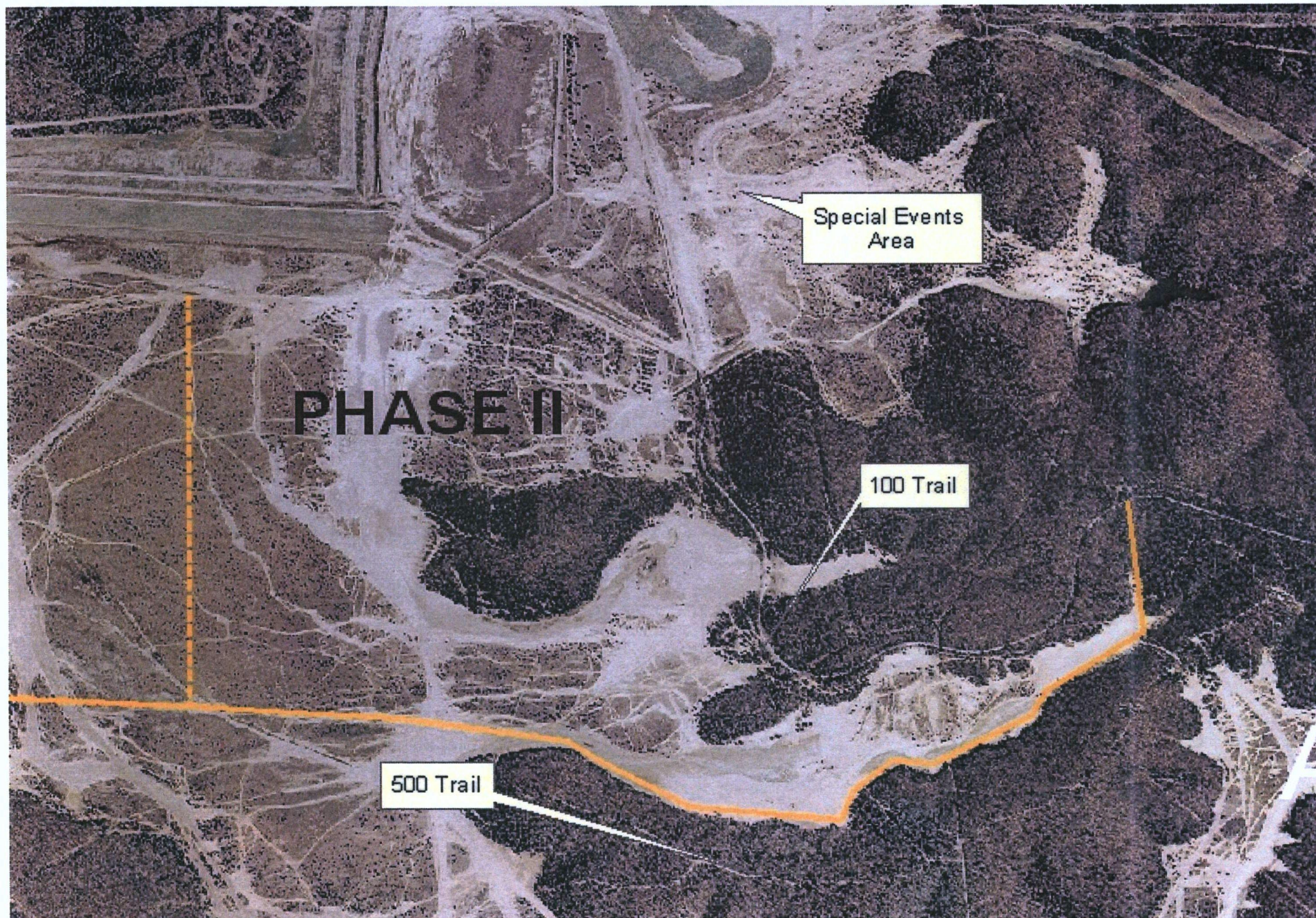


## ORV Area Closure – Phase I



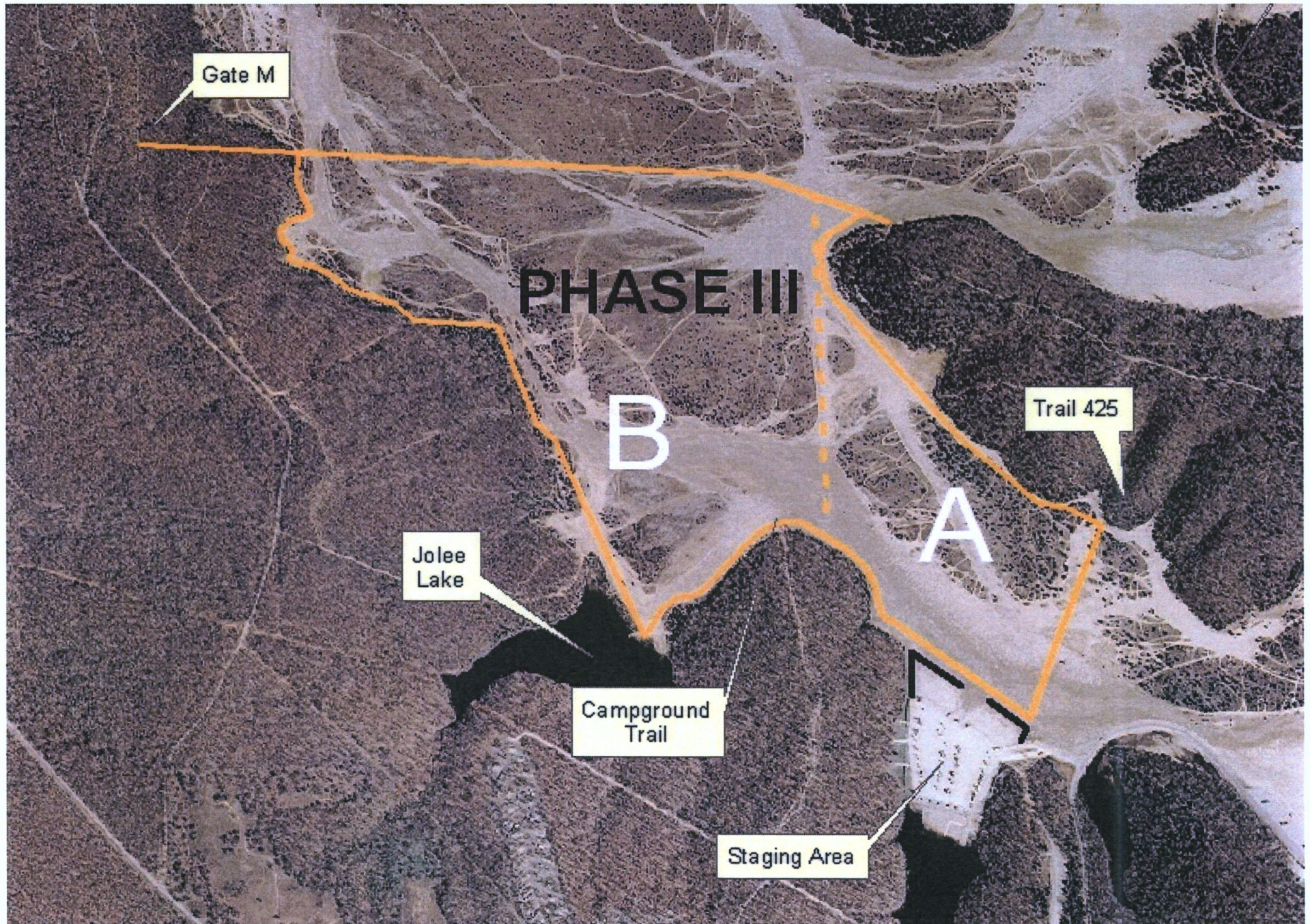


## ORV Area Closure – Phase II





## ORV Area Closure – Phase III





## ORV Area Closure – Phase IV

